

Awareness and Perceived Effectiveness of Scaffolding Techniques on Social Communication Skills in Children with Autism Spectrum Disorder: A Survey among Speech Language Pathologists in Kerala

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Abstract

Autism Spectrum Disorder (ASD) is characterised by difficulties in social communication and social interaction, which can affect a child's participation in daily activities. Speech Language Pathologists (SLPs) play an important role in assessing and improving communication skills in children with ASD. Scaffolding techniques provide structured support that may help enhance social communication abilities. Therefore the present study aimed to assess the awareness and perceptions of SLPs regarding the effectiveness of scaffolding techniques in improving social communication skills in children with ASD. A total of 50 SLPs completed a 21 item Yes/No questionnaire. Data was analysed using descriptive statistics and a one-sample Z test for proportions. The findings revealed high awareness and positive perceptions regarding the benefits of scaffolding techniques. Overall the study supports the use of scaffolding as an effective intervention strategy for improving social communication skills in children with ASD.

Keywords: Autism Spectrum Disorder, Scaffolding Techniques, Social Communication, Speech Language Pathologists, Intervention, ASD.

Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by persistent deficits in social communication and social interaction along with restricted and repetitive patterns of behaviour and interests. According to the American Psychiatric Association [APA] (2013), individuals with ASD often experience difficulties in initiating and maintaining social interactions, understanding nonverbal communication, and developing age appropriate peer relationships. These challenges can significantly affect academic performance, social participation, and overall quality of life (Lord et al., 2020; APA, 2013). Speech Language Pathologists (SLPs) play a crucial role in assessing and managing

communication difficulties in children with ASD through the use of evidence-based intervention strategies aimed at improving social communication skills.

The concept of scaffolding was introduced by Bruner, Wood and Ross (1976) based on the sociocultural theory of Vygotsky. Scaffolding refers to the temporary support provided by a more knowledgeable individual to help a learner perform a task beyond their current level of competence. As the learner gains proficiency the support is gradually withdrawn, fostering independence and skill acquisition. Common scaffolding techniques used in ASD intervention include modelling, in which the therapist demonstrates the desired behaviour or communication skill. Prompting involves providing verbal, visual, gestural, or physical assistance to guide a child toward producing the desired response or behaviour. Visual supports such as pictures, schedules, or symbols aids in understanding and communication. Guided participation involves the child actively taking part in activities while receiving support and guidance from the therapist to successfully complete the task. Cueing involves providing hints, signals, or reminders to help the child understand what to do and to perform a task successfully. Feedback refers to giving information about the child's performance, reinforcing correct responses and helping improve communication skills. Structured social interactions are planned social activities that provide opportunities for children to practice and develop communication skills in supportive and organized settings. These techniques provide individualized support that helps children learn new skills within meaningful social contexts.

Social communication is a critical area of intervention for children with ASD as it forms the foundation for successful interpersonal relationships and participation in daily activities. Scaffolding techniques have been increasingly utilized by SLPs, educators, and caregivers to facilitate the development of social communication skills in children with ASD. The benefits of scaffolding include improved conversational abilities, turn taking, joint attention, social engagement, pragmatic language skills, independence, and generalization of learned skills across different settings. By providing appropriate support and gradually reducing assistance, scaffolding encourages active participation and promotes long term communication development. Therefore investigating the effectiveness of scaffolding techniques on social communication skills in children with ASD is essential for developing evidence-based intervention strategies and improving communication outcomes.

Bruner, Wood and Ross (1976) introduced the concept of scaffolding and demonstrated how adult guidance supports children's learning. Temporary assistance enabled children to perform tasks beyond their independent abilities. Support was gradually withdrawn as competence increased. The study established the theoretical basis for scaffolding interventions.

Bellini and Akullian (2007) conducted a meta analysis of video modelling interventions for individuals with ASD. Video modelling served as a visual scaffold for learning communication and social skills. Findings showed significant improvements in social interaction and communication outcomes. The study confirmed the effectiveness of scaffolded visual supports.

Ingersoll and Dvortcsak (2010) developed Project Impact, a parent mediated intervention for children with ASD. Parents used modelling, prompting, and feedback strategies during daily interactions. Children demonstrated improvements in social communication and language skills. The study highlighted the effectiveness of scaffolded communication support.

Dykstra et al. (2012) evaluated the Advancing Social communication And Play (ASAP) intervention among preschool children with ASD. The intervention incorporated guided participation, prompting, and modelling techniques. Results showed increased social communication and play behaviours and the study supported the scaffolded intervention practices for ASD.

Rahman et al. (2016) examined a parent mediated intervention for children with ASD in South Asia, including India. Parents were trained to use guided interaction and communication support strategies. Children showed improvements in social communication and parent child interactions. The study demonstrated the effectiveness of scaffolding-based support in natural settings.

Qi et al. (2018) reviewed 24 studies on video modelling interventions for individuals with ASD. The intervention provided structured visual guidance to teach social communication skills. Results demonstrated improvements in communication and social participation. The review identified video modelling as an evidence-based scaffolded practice.

Binns and Cardy (2019) conducted a systematic review of developmental social pragmatic interventions for preschool children with ASD. Many interventions incorporated scaffolding through guided interaction and responsive support. Findings showed improvements in joint attention, communication initiation, and social reciprocity. The review supported scaffolding as an effective approach for social communication development.

Divan et al. (2019) evaluated the PASS Plus parent-mediated intervention among children with ASD. Parents were taught structured communication and interaction techniques during daily routines. Results indicated improvements in communication skills and social engagement. The findings highlighted the importance of parental scaffolding in intervention.

Sengupta, Mahadik, and Kapoor (2020) adapted Project Impact for the Indian context and trained parents to use modelling and prompting strategies. The intervention focused on enhancing social communication skills in children with ASD. Results showed improved communication and parent-child interaction. The study supported the feasibility of scaffolded interventions in India.

Padmadewi, Artini, and Suarnajaya (2024) investigated the role of scaffolding through social environment programmes for students with ASD. Strategies included peer support, modelling, and guided participation. Findings revealed improvements in communication and social interaction skills. The study emphasized the benefits of structured social support.

Schuchert et al. (2024) evaluated the Eye to I© intervention model among children with ASD. The intervention used guided play and adult support to enhance communication abilities. Significant improvements were observed in social engagement and interaction. The findings supported the use of scaffolding based intervention approaches.

Samantaray et al. (2025) developed an augmented reality (AR) and virtual reality (VR) based platform to improve joint attention in children with ASD. The technology provided visual cues and structured support during communication activities. Results showed enhanced attention and communication related behaviours. The study suggested that digital scaffolding can facilitate social communication development. SLPs play a crucial role in the assessment, diagnosis, and intervention of communication difficulties in children with ASD. They help improve speech, language, social communication, and pragmatic skills through individualized and evidence based intervention approaches. SLPs also work closely with parents, teachers, and other professionals to create supportive communication environments and promote the child's participation in social and daily activities. Their expertise is essential in enhancing the overall communication abilities and quality of life of children with ASD.

Need of the Study

Children with ASD often experience significant difficulties in social communication, affecting their social participation, academic performance and daily functioning. Scaffolding is a supportive intervention

approach introduced by Bruner, Wood and Ross (1976), in which a more knowledgeable person provides temporary assistance to help a child learn new skills. Techniques such as modelling, prompting, visual supports, and guided participation can help children with ASD develop social communication abilities and gradually become more independent. Despite its increasing use in intervention, limited information is available regarding SLPs awareness and perceptions of its effectiveness. Therefore the present study was conducted among SLPs in Kerala using a questionnaire based survey to explore the gap in their knowledge, awareness, and perceptions regarding the use of scaffolding techniques for improving social communication skills in children with ASD.

Methodology

Aim of the Study

To assess the level of awareness and clinical use of scaffolding techniques among SLPs in Kerala who work with children with ASD through a questionnaire-based survey.

Participants

The study included 50 SLPs from Kerala who had experience working with children with ASD. Participants were selected randomly and completed a questionnaire about the use and effectiveness of scaffolding techniques for improving social communication skills.

Inclusion Criteria

- SLPs with at least one year of clinical experience in the assessment and management of children with ASD.
- SLPs currently working in hospitals, clinics, rehabilitation centres, special schools or academic settings.
- SLPs who have knowledge of social communication interventions, including scaffolding based approaches.

Exclusion Criteria

- Undergraduate SLPs students.
- SLPs with no experience in working with children with ASD.
- Professionals from disciplines other than speech language pathology.

Procedure

A 21 item Yes/No questionnaire was administered to 50 SLPs to assess their perspectives on the effectiveness of scaffolding techniques in improving social communication skills in children with ASD. Informed consent was obtained before data collection, and participants were asked to complete the questionnaire based on their clinical experience. The collected data will be analysed using descriptive statistics such as frequencies and percentages.

Statistical Analysis

The collected data was analysed using descriptive and inferential statistics. Frequencies and percentages were calculated to determine the level of awareness and perceptions of SLPs regarding scaffolding techniques. A one sample Z test for proportions was performed to examine whether the observed responses

differed significantly from the expected proportion. Statistical significance was determined at a p-value of less than 0.05. The results were presented in tabular form and interpreted accordingly.

Result and Discussion

Table 1 Shows level of awareness in scaffolding technique

	Frequency	Percentage (%)	Z value	p-value	Significance
Do you know what the scaffolding technique is an intervention for children with ASD?	40	80	4.243	<0.001	HS
Are you aware that scaffolding techniques can help improve communication skills in children with ASD?	43	86	5.091	<0.001	HS
Do you use scaffolding techniques during intervention sessions with children with ASD?	36	72	3.111	0.002	HS
Does the child complete the target task with fewer verbal prompts than when the scaffolding was first introduced?	32	64	1.980	0.048	S
Can the child initiate the first step of a broken-down activity without an adult's direct intervention?	45	90	5.657	<0.001	HS
Has the child successfully transitioned from physical guidance (hand-over-hand) to lighter prompts (gestural or visual)?	42	84	4.808	<0.001	HS
Does the child look at or reference a visual cue card before responding to an instruction?	36	72	3.111	0.002	HS
Does the child continue to perform the skill accurately when a portion of the visual aid or template is removed?	40	80	4.243	<0.001	HS
Is the child able to complete the targeted skill faster now than before the scaffolding was implemented?	45	90	5.657	<0.001	HS
Does the child use provided communication scaffolds (e.g., sentence frames, PECS, or speech-generating devices) more frequently to express needs?	38	76	3.677	<0.001	HS
Has the child shown an increase in spontaneous communication during routines that utilize scaffolding?	39	78	3.960	<0.001	HS

Does the child successfully engage in turn-taking when supported by a visual timer or token board?	39	78	3. 96 0	<0. 00 1	HS
Can the child follow a scaffolded play routine with a peer for at least 5 minutes?	37	74	3. 39 4	<0. 00 1	HS
Can the child sustain attention on a structured task for the entire duration of a scaffolded segment?	43	86	5. 09 1	<0. 00 1	HS
Does the child autonomously complete a multi-step daily routine (e.g., handwashing) by following a step-by-step visual task analysis?	40	80	4. 24 3	<0. 00 1	HS
Has the child's frustration, anxiety, or resistance decreased during transitions when a visual schedule or countdown is used?	40	80	4. 24 3	<0. 00 1	HS
Does the child exhibit fewer meltdowns or repetitive behaviours when a complex task is broken down into smaller, scaffolded pieces?	38	76	3. 67 7	<0. 00 1	HS
Does the child attempt to perform the newly learned skill in a different environment (e.g., from therapy to home) with minimal adjustments?	37	74	3. 39 4	0.0 01	HS
Can the child successfully perform the scaffolded skill with a different educator, therapist or caregiver?	39	78	3. 96 0	<0. 00 1	HS
Does the child retain the skill over weekends or short breaks without requiring a complete reset of the scaffolding process?	45	90	5. 65 7	<0. 00 1	HS
Does the child appear more confident, engaged or eager to participate during scaffolded activities compared to unstructured ones?	40	80	4. 24 3	<0. 00 1	HS

Figure 1 Shows level of awareness in scaffolding technique

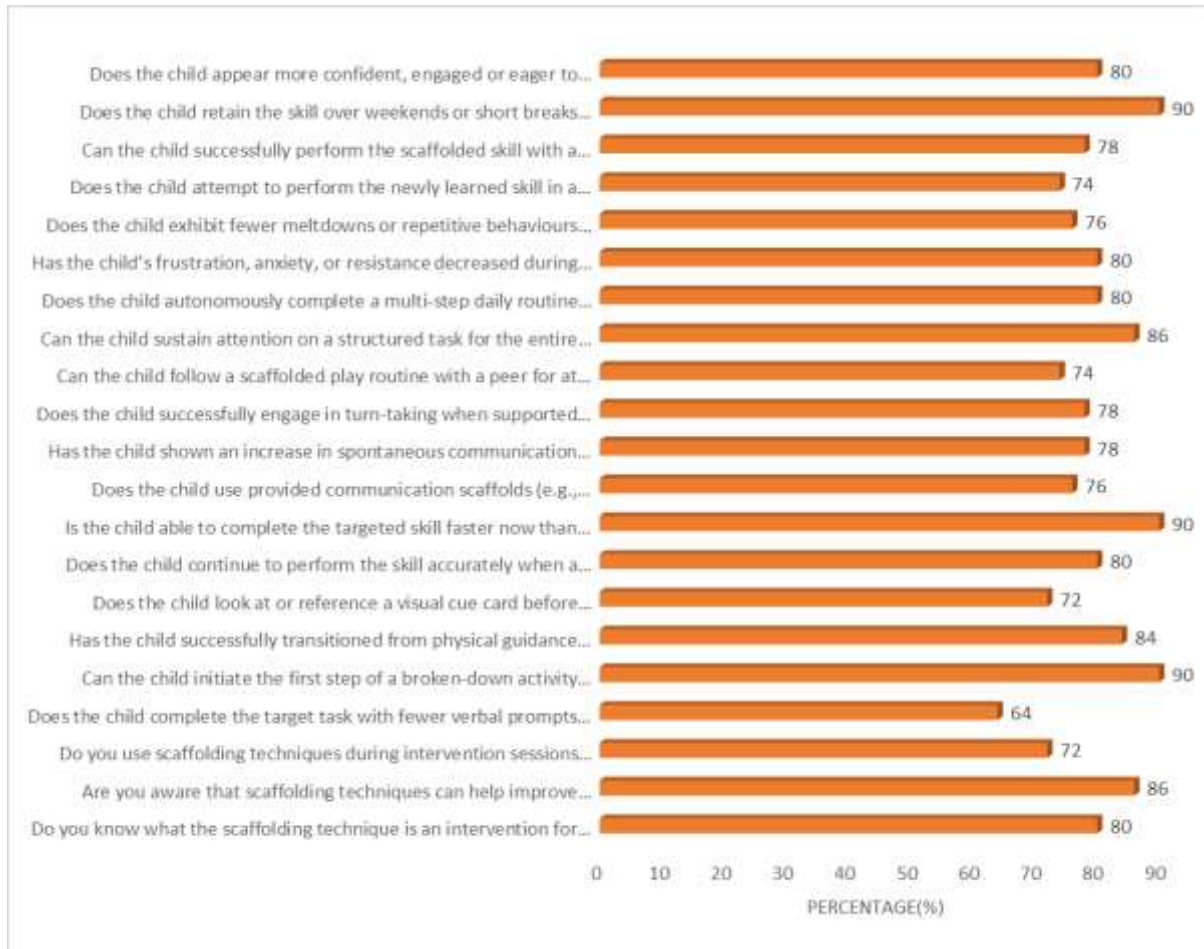


Table 1 and figure 1 shows the awareness, use, and perceived effectiveness of scaffolding techniques among SLPs working with children with ASD. A high level of awareness was observed with 80% of participants reporting knowledge of scaffolding techniques and 86% recognizing their role in improving communication skills. Most clinicians (72%) reported using scaffolding during intervention sessions. The highest positive responses (90%) were noted for children initiating activities independently, completing targeted skills faster, and retaining learned skills over short breaks. A large proportion of participants also reported improvements in attention (86%), transition from physical to lighter prompts (84%) and independent completion of daily routines (80%). Communication outcomes such as increased spontaneous communication (78%) and greater use of communication support (76%) were also reported. Social participation and skill generalization showed positive responses ranging from 74% to 78%. Overall, all items demonstrated statistically significant results ($p < 0.05$) indicating strong awareness and favourable perceptions regarding the effectiveness of scaffolding techniques in supporting children with ASD.

Discussion

The present study examined the awareness and perceptions of SLPs regarding the use of scaffolding techniques to improve social communication skills in children with ASD. The findings showed that most SLPs were aware of scaffolding techniques (80%), recognized their benefits for communication development (86%) and reported using them in clinical practice (72%). Participants perceived scaffolding as an effective intervention approach that promotes independence, improves spontaneous communication, turn-taking, attention, engagement, and successful task completion. They also reported that visual supports

and structured guidance reduced anxiety and challenging behaviours while facilitating skill acquisition and generalization across settings. Overall, the statistically significant findings indicate strong professional support for scaffolding techniques in enhancing social communication skills in children with ASD.

The findings are consistent with previous research on scaffolding interventions in ASD where Schuchert et al. (2024) reported that the Eye to I© intervention model, using guided play and adult support, significantly improved social engagement and communication in children with ASD. Similarly, Samantaray et al. (2025) found that an AR and VR based platform providing visual cues and structured support enhanced joint attention and communication-related behaviours. However, most existing evidence comes from Western countries, with limited research on SLPs' awareness and clinical use of scaffolding techniques, particularly in India. Therefore, the present study adds to the existing literature by highlighting SLPs' positive perceptions of scaffolding techniques and emphasizes the need for further research in diverse cultural and clinical settings.

Summary and Conclusion

ASD is characterized by difficulties in social communication and social interaction, which can affect a child's daily functioning and quality of life. The present study assessed the awareness and perceptions of 50 SLPs regarding the effectiveness of scaffolding techniques in improving social communication skills in children with ASD. Data was collected using a 21 item Yes/No questionnaire, and the findings revealed a high level of awareness and positive perceptions toward the use of scaffolding techniques. The results indicated that scaffolding strategies help improve communication, social interaction, attention, turn taking, independence and skill generalization in children with ASD. Overall, the study supports scaffolding as an effective and clinically relevant intervention approach and highlights the important role of SLPs in facilitating social communication development. Further intervention based research is recommended to establish its effectiveness through direct assessment of children with ASD.

Limitations of the Study

- Small sample size of 50 SLPs.
- Long-term effects of scaffolding techniques were not examined.

Future Directions

- Conduct intervention-based studies to evaluate the effectiveness of scaffolding techniques in children with ASD.
- Include larger and more diverse samples to improve the generalizability of findings.
- Examine the long-term effects of scaffolding on skill maintenance, generalization, and social communication outcomes.

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